

# W5YI

Nation's Oldest Ham Radio Newsletter

## REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

Fred Maia, W5YI, Editor, P.O. Box 565101, Dallas, TX 75356-5101

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## FCC PROPOSES TO RELAX RESTRICTIONS ON BUSINESS COMMUNICATIONS

*"The proposed changes...would increase the amateur community's responsibilities for self-regulation and cooperation in the use of their assigned frequencies." - FCC News Release*

*"The idea of potential business use of the Amateur Service and the question about transmitting music, it seems to me, are fraught with implications and temptations to pervert the use of the Amateur Service in business directions." - FCC Commissioner Ervin Duggan*

*"The Amateur Service was a well-disciplined service for years, compared maybe with other services like CB. But we're getting more and more complaints on obscenity and indecency over the air. Some of it is very raunchy." - FCC Commissioner James Quello*

On June 18, the FCC adopted its long-awaited Notice of Proposed Rulemaking (NPRM) to change the "Prohibited Transmissions" rule in the Amateur Radio Service (Rule 97.113). Developed over many years, the current rule is designed to preserve the service's non-commercial nature while permitting it to be used for certain public-service applications.

The rule has long given some amateurs grief, particularly those involved in mass public-service events such as races and parades. Organizers of these activities may prefer the help of amateur volunteers and their radios instead of having to obtain communications through other services such as Business Radio or cellular phones. The limitation appears closer to home when amateurs cannot legally use their radios to conduct hamfest communications. Amateurs may currently transmit only certain kinds of public-service event communications -- mostly related to safety -- and may not use their frequencies for the ordinary transportation and administrative operations of an event or agency.

In response to requests from the ARRL and others, "the FCC has proposed amending its rules for the

amateur service by lessening restrictions on the scope of the permissible communications that amateur stations may transmit," the Commission said in a news release. "Specifically, the proposal includes greater flexibility to transmit communications for public-service projects and personal matters."

"While eliminating some of the existing restrictions would provide the flexibility to expand public service activities and satisfy the personal communications interests, the potential for commercial exploitation and abuse of the amateur service's allocated frequencies could increase," the FCC noted. In adopting the ARRL's proposed revision, the FCC said that the general prohibition against amateur stations transmitting messages for hire or for material compensation, direct or indirect, would remain. The revision "would allow amateur stations to transmit occasionally certain types of communications that are now prohibited," the FCC said. The matter was presented to the FCC for a vote at its meeting on Thursday, June 18. Here is a transcript:



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**(Personal Radio Branch Senior Analyst William Cross:)**

"Good morning, Mr. Chairman and Commissioners. The Amateur Service is for technically-inclined individuals who derive personal satisfaction from understanding and using radio technology.

"They engage in self-training, information exchange, and experimentation. Many licensees also use their stations voluntarily to provide non-commercial, public-service communications. This tradition of serving the public is a hallmark of the Amateur Service.

"The rules, however, contain pecuniary interest restrictions that limit the types of communications that amateur operator stations can transmit. These constraints sometimes discourage licensees from providing public-service communications to the extent they desire.

"For example, licensees cannot provide logistical or news-gathering communications at events such as parades or marathons, and they cannot supplement the communications systems of police, fire or rescue agencies. Further, there is growing interest in making greater use of the Amateur Service for personal communications.

"As a result, a number of operators and organizations have expressed interest in broadening the scope of communications that can be transmitted by amateur stations. We have received several petitions including one from the American Radio Relay League, requesting a relaxation of the restrictions in the rules. The item before you, therefore, proposes the amendment the League suggests.

"Under this proposal, licensees who are teachers, for example, could use their stations in classroom instruction. Licensees could provide logistical communications for races and other public gatherings. And, they could gather and report data to government agencies, such as the National Weather Service. Licensees would also have more flexibility in using their stations in their personal activities.

"This proposal is not intended to alter, in any way, the nature and purpose of the Amateur Service. Rather, it would allow licensees to better serve the public, and to enhance their personal communications capabilities. The Bureau recommends that you adopt this Notice of Proposed Rulemaking. Editorial privileges are requested. Thank you."

(Chairman Alfred Sikes:) "And, they will be granted, if I don't hear objections. Commissioner Quello?"

**(Commissioner James Quello:)** "I'll go along with the Notice. I'm a little bit concerned that the original intent of Amateur Radio could be affected by relaxing the rules."

"We're getting more and more complaints. The Amateur Service was a well-disciplined service for years, compared maybe with other services like CB. But we're getting more and more complaints on obscenity and indecency over the air. Some of it is very raunchy. It's probably in violation -- what is the section? Is it 97.113 of our rules? Is this a violation, and can we do anything about it?"

**(Private Radio Bureau Chief Ralph Haller:)** "Well, specifically with regard to the obscenity and indecency issue, we are attempting to work with both the General Counsel's office, and the American Radio Relay League has just conducted a survey of times when there are younger people in the amateur audience and such.

"Unfortunately, some of the things that are objectionable to most of us are still protected speech under the First Amendment, and so we have to draw that conclusion as to what is a violation and what is not. For that, we have been working closely with Bob Pettit and his staff, and I would ask Bob to add anything he might want to."

**(FCC General Counsel Robert Pettit):** "The ARRL's been very helpful in developing this survey. I think it will give us some sort of a handle as to what the child audience is. Of course, our regulation of this is very dependent on that. We're going over the results of that now. It was conducted in April of this year."

**(Commissioner Quello:)** "I think unless we do something to curb it, it's going to increase. Some of the combination of language that I've heard, I hadn't heard during my 33 months overseas in the Army, and I didn't think there was anything left that I hadn't heard by that time. We have to watch it."

**(Ralph Haller:)** "It's just a few. We have nearly a half-million licensed amateurs in the country, and it's just a handful of them that are causing the problem. If we can get some control of those I think we'll get it straightened back."

**(Commissioner Sherrie Marshall:)** "I share Commissioner Quello's concerns that we not relax the rules and undermine the integrity of the Amateur Service. The Amateur Service has performed a great deal of public benefits. And, we don't want a few bad apples to ruin the whole bunch."

\*Having said that, I think that the American Radio Relay League has made a good point that the rules in question may unnecessarily restrict some of the communications. So if we can relax some of these rules,

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again, without undermining the system, then I'll be interested in seeing the comments."

**(Ralph Haller:)** "I gave a speech two weeks ago at an amateur meeting, and our rules are so restrictive that when I arrived, the person who met me at the gate radioed to others at the convention that I had arrived. And that is technically a violation of our current rules. They cannot even use their radios for logistical support of their own conventions. That's the type of restriction we're trying to remove here."

**(Commissioner Marshall:)** "Well, as long as they're not making an indecent description of how you arrived!" (Laughter.)

**(Commissioner Andrew Barrett:)** "I support the item, Mr. Chairman."

**(Commissioner Ervin Duggan:)** "I want to echo what my colleagues Commissioner Quello and Commissioner Marshall have said. I will read the comments with a very, very keen interest in preserving the original intent of the Amateur Service. The idea of potential business use of the Amateur Service and the question about transmitting music, it seems to me, are fraught with implications and temptations to pervert the use of the Amateur Service in business directions.

"I think with the commercial radio service in economic trouble, this is a confusion and an intrusion that we simply do not want to invite. So I want to sound a warning here that I will read the comments and react to them with extreme caution. I hope you can allay my fears in this direction. Ralph, if you would like to say anything now that would allay my fears in this regard, I would appreciate it."

**(Ralph Haller:)** "We share those concerns just as deeply as you do. There's no intent here whatever to change the Amateur Service into a commercial service. There is no intent that this service be used in place of commercial services. But on the other hand, when the rules are so restrictive that, as in the example I gave, the amateurs can't even use the radios for their own communications, then I think we have to draw a little bit different balance from where we are right now. But certainly, we don't want to go too far."

**(FCC Chairman Sikes:)** "I'd like to thank the American Radio Relay Association (sic) for bringing this to the FCC. I think there are a number of legitimate questions that they have raised. I know Commissioner Quello has for a long time been a real champion of Amateur Radio; and also has thought their self-policing

efforts have been quite good. I would certainly agree with his earlier comments that we don't want to do anything here that might hurt either the fundamental integrity of the service or the policing of the service by amateurs themselves.

"So anyway, I'll support this item but as my colleagues have indicated, we'll be very interested in the comments. If there are no more comments on this, we will move to a vote." (*The NPRM passes unanimously; end of FCC meeting transcript.*)

Private Radio Bureau Chief Haller made a few additional comments following the FCC meeting. He noted that the NPRM does not propose to allow routine retransmission of music in the Amateur Service except for some situations, as when NASA sends music to the Space Shuttle. NASA does this as a gag or a wake-up call to astronauts and some amateurs who retransmit Space Shuttle communications (permitted by Rule §97.113(e)) may have been concerned about the legal status of such music on the ham bands. Haller also noted that the NPRM does not propose any changes to the rules that prohibit indecent or obscene material on amateur frequencies.

We asked him about how the FCC will define the words "occasionally" or "on a regular basis" -- key terms that will govern how often amateurs will be able to conduct the communications that are now prohibited. He replied that the FCC will look to the comments for suggestions on how to define these terms.

The actual text of the NPRM will not be available until the end of June or early July. Later in the day (on June 18th) the Federal Communications Commission released the following Press Release. [Quote]

## **FCC PROPOSES RELAXING RESTRICTIONS ON PERMISSIBLE COMMUNICATIONS IN AMATEUR SERVICE**

"The FCC has proposed amending its rules for the amateur service by lessening restrictions on the scope of the permissible communications that amateur stations may transmit. Specifically, the proposal includes greater flexibility to transmit communications for public service projects and personal matters.

"The Commission noted that many individuals in the amateur community appear to strongly support relaxing one or more of the existing restrictions on the scope of amateur services communications. The restrictions were resigned to protect the non-commercial character of the amateur service and ensure its basis and purpose, i.e. as a reservoir of volunteer communicators, technicians and electronics experts dedicated to advancing the radio art, to provide public service communications particularly in times of



emergencies, and to enhance international goodwill, could be carried out.

"While eliminating some of the existing restrictions would provide the flexibility to expand public service activities and satisfy the personal communications interests, the potential for commercial exploitation and abuse of the amateur service's allocated frequencies could increase.

"Specifically, the Commission proposed the revision suggested by the American Radio Relay League. This revision would allow amateur stations to transmit occasionally certain types of communications that are now prohibited. The intent of the suggested revision is to allow amateur operators who so desire greater flexibility to increase their public service communications activities, for example, in support of parades, races, and other such public gatherings. The general prohibition against amateur stations transmitting messages for hire or for material compensation, direct or indirect, however, would remain in the rules.

"These proposals are not intended to alter in any way the nature and purpose of the amateur service. The proposed changes, however, would increase the amateur community's responsibilities for self-regulation and cooperation in the use of their allocated frequencies.

"Action by the Commission, June 18, 1992, by Notice of Proposed Rulemaking." *[End of Press Release]*

Again, the actual details of the FCC proposal are not yet known since it takes time to publish and circulate the complete text of the NPRM. The Notice will thoroughly discuss the FCC thinking and put forth specific proposed regulations. We will have a more detailed account of the FCC's view on amateur service communications once we receive it. As with all new proposed rulemaking, the public will have a chance to comment on the proceeding.

## **BACKGROUND OF ALTERING THE "NO BUSINESS" COMMUNICATIONS RULE!**

The NPRM certainly did not come as a surprise. The concept was first presented to the amateur community by FCC Private Radio Bureau Chief, Ralph Haller in his prepared remarks at the ARRL National Convention held in Saginaw, Michigan, last August. (See *W5YI Report 10/15/91*) Actually, the ARRL and the FCC's Private Radio Bureau have been discussing the matter of more liberal amateur communications for more than a year.

Although the FCC meeting to consider the NPRM only mentioned the proposal from the American Radio

Relay League, the Federal Communications Commission has received dozens of other requests for relaxation of §97.113, the so-called "no-business" rule - some of which were associated with the item.

The ARRL only addressed greater flexibility for amateur radio operators to transmit communications for public service projects in their proposal. Other requests ask for permission to transact personal and logistical business. These were proposed as rule amendments in the NPRM.

It is common knowledge that the FCC has been the object of considerable lobbying, letter writing, phone calls, petitions ...even Congressional inquiries on the subject of prohibited and permissible amateur communications. The Commission asked for the League's views on the matter earlier last year.

In Saginaw, Haller reported "The existing absolutely-no-business rule, unfortunately, often stands in the way of your helping out. Its well-meaning purpose is to help preserve the character of the amateur service. ...a device to prevent exploitation... Quite frankly, we have always been more than a little uncomfortable with it. As frequency managers, we feel overly bureaucratic when we have to tell you that you must not use your ...frequencies for non-amateur purposes. After all, the real anti-exploitation rules are rooted in your respect for the principles for which your frequencies are made available to you, and by your good judgment."

Haller then gave a viewgraph slide presentation of "Secondary Usage" of amateur spectrum. This concept would provide for such non-amateur communications as logistic support for public events, communications supporting government and public safety agencies, classroom instruction, news gathering involving the media, retransmitting non-amateur service information (such as NOAA weather, Voice of America and WWV time signals) ...even ham club and personal business. Non-amateur communications "...would have to be limited to only those areas where the FCC regulates communications because of the prohibitions in the International Regulations," he said.

Regular amateur and emergency communications would continue to take precedence and non-amateur communications would only be permitted when ham band loading permitted. Haller defined emergency work as operation during a disaster, safety of life, protection of property, station in distress and RACES (Races Amateur Civil Emergency Service) communications. He said primary usage relates to the amateur service; specifically regulations, operating procedures and practices, electronics, station equipment ...and the like.

Amateurs would still be prohibited from selling a

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communication service that uses amateur service frequencies although "The control operator of an amateur station may accept compensation for periods of time during which the station is transmitting Morse practice, information bulletins and classroom instruction."

Haller said he hoped the amateur community would "...give this suggestion ...careful attention. You could be of great assistance to those in need of better communications, and properly implemented, this approach should have no adverse effect upon what you are now doing." It is not known at this point if the NPRM supports the Emergency, Primary and Secondary amateur communications concept.

## ARRL submits proposal

The League responded by submitting a fourteen page single-spaced typewritten letter in January of this year outlining its ideas for additional amateur communications capability. The letter was treated as a *Petition for Rulemaking* by the FCC since it contained a suggested regulatory restatement of Section 97.113 - the "no business" rule. That proposal and others formed the basis for the Commission's NPRM.

"While there is occasionally only a fine line between proper use of amateur radio for public service communications and improper exploitation of amateurs by non-licensees," ARRL said, "the League continues to believe that the rules should err in favor of flexibility, recognizing that the self-regulating character of the radio amateur is a reasonable means of providing the proper balance."

The League's proposed restatement of Section §97.113 was based on four principles and "...constitutes a middle ground between removal of all rules governing business communications, and the present interpretational status of §97.113," ARRL said.

The four principles cited were:

- (1.) Communications in exchange for compensation are prohibited;
- (2.) Communications for the benefit of one's employer are prohibited;
- (3.) Communications in which the control operator or licensee have a pecuniary interest are prohibited; and;
- (4.) "...the Amateur Service shall not be regularly substituted for other licensed radio services."

The ARRL did not define what "regularly substituted" meant except to say that while volunteer communications might be provided for an occasional event - such as the Rose Bowl Parade - they could not be regularly provided for services which have their own

assigned frequencies such as "...routine riding with police on patrol."

The League said music should be prohibited. Another petitioner, **Michael R. Reynolds, W0KIE** of Tulsa, Oklahoma, wanted permission to retransmit all NASA audio and video communications between the space shuttle and earth stations. **KB9FO, Henry Ruh** of Des Plaines, Illinois, petitioned the FCC (assigned RM-7896) to allow the retransmission of any information - including NASA select and weather radar - not protected by copyright including background or incidental soundtrack music.

## THE "NO-BUSINESS" RULE ON THE HAM BANDS

Seven of the fourteen page proposal by the American Radio Relay League contained a rather detailed and interesting chronological history of the prohibition of business communications in the Amateur Service.

ARRL said that prior to 1983, business communications in the Amateur Radio Service were not expressly outlawed in the rules. A problem arises, however, when regulations attempted to address the fact that others besides the licensee and the general public, may benefit from amateur communications.

The current definition of an amateur as a person "...interested in radio technique solely with a personal aim and without pecuniary interest" was adopted by the International Telegraph Conference (the previous name of the ITU) held in Washington in 1927.

In 1928, the Federal Radio Commission (which became the FCC in 1934) enacted rules prohibiting amateurs from transmitting "...news, music, lectures, sermons, or any form of entertainment or to conduct any form of commercial correspondence."

In the 1950's, Rules provided that an amateur station "...shall not be used to transmit or receive messages for hire, nor for communication for material compensation, direct or indirect, paid or promised." That limitation is essentially the same as contained in the current Section §97.113(b).

In 1971, the FCC concluded that "...unlimited operation in behalf of such organizations [as the Eye Bank Association, Red Cross and other charitable organizations] could generate large numbers of new networks and the use of amateur radio as a medium for the organized advocacy of social, political or economic views could pre-empt amateur frequencies to the exclusion of the individual amateur for whom the service was intended."

Until 1972, the Rules prohibited licensing of an amateur radio station to a "...school, company, corporation, association or other organization, *nor for its use...*" The phrase "*nor for its use*" was intended to



prevent amateurs from using the amateur service for their employer's business communications.

In 1972 new third party traffic rules prohibited amateur radio from being "...used for any pecuniary interest to any party or for commercial communications." A later court ruling, however, distinguished occasional public service amateur communications from commercial use of the service.

In 1983, the FCC further clarified their third party traffic rules with an Order stating, "...the Amateur Service should not be used as an alternative to the land mobile, broadcast, maritime or common carrier radio services, all of which have been established by appropriate regulatory processes."

The Order also provided an interpretation of the term "business communications" in "...the broadest context. It includes all types of communications which are intended to facilitate the regular business or commercial affairs of any party, whether individual or organization, whether for profit or not-for-profit, whether charitable or commercial, and whether government or non-government."

This interpretation effectively disallowed virtually all communications in support of Red Cross efforts, since the regular business of the Red Cross involves relief work, regularly coordinated by amateurs. Another still later clarification held that "...the Order does not prohibit amateur radio operators from participating in the routine events of traditional public service activities. ...Although they may incidentally 'benefit' the sponsor, their main purpose is to provide a service to the public, which is the real beneficiary..."

The ARRL pointed out that while the FCC has always been properly concerned about exploitation of the Amateur Radio Service by non-amateur licensees for private benefit, "...one of the most basic purposes of the Amateur Radio Service, in addition to providing emergency communications, has been the provision of public service communications at events sponsored by private and governmental organizations." The ARRL says it "...has always supported minimal content regulations in this area, and continues to do so."

## UPS LOSES BID FOR 220 MHz HEARINGS

The Commission also voted against the request of United Parcel Service in the licensing of the formerly amateur 220-222 MHz band. Over 60,000 applications have been filed for the new 220 MHz business spectrum - 174 of them for commercial and non-commercial nationwide channels. UPS had wanted the FCC to use comparative hearings to decide who may receive certain classes of extremely valuable nationwide licenses in the band. The company may have believed that it

would prevail in these hearings over other companies and organizations that also seek licenses. One of the other applicants was the American Red Cross, which commented that UPS was using its "wealth as a hammer" to lobby for hearings instead of lotteries.

The FCC has not held comparative hearings since the mid-1980's, early in the cellular licensing process. Instead of the expensive and tedious hearings, the FCC stuck with its view that these licenses should be awarded by lottery -- giving UPS, which has apparently risked millions on developing 220-222 MHz systems, the same chance as others to receive, or not receive, a license.

Although the FCC voted to use the lotteries, FCC Chairman Alfred Sikes made no secret of his disdain for a system that gives away licenses without charging licensees anything more than processing fees (which can amount of tens of thousands of dollars for 220 MHz licenses). The FCC still does not have authority from Congress to award licenses to the highest bidder. Sikes called the current system "loony" and "bankrupt" and renewed his call for auctioning of licenses.

UPS recently announced that it is converting much of its mobile communications to cellular anyway. UPS has contracted with four cellular carriers to create a mobile data service to trace air and ground package shipments. All 50,000 UPS delivery trucks will be outfitted with cellular equipment by early 1993 that will allow immediate tracking through UPSnet. The new technology allows access to delivery status information for more than one million UPS daily pickup customers.

## "INTERFERENCE PROBLEMS INSIGNIFICANT," FCC ENGINEER SAYS

The FCC also amended its rules to make it easier for manufacturers of "Smart House" home automation products to transmit signals over AC power lines. This equipment controls energy use, alarms and appliances. The rules will place restrictions on the amount of RF that can be conducted onto the AC lines within the AM broadcast band.

The ARRL asked the FCC to take into account the susceptibility of these home automation systems to malfunction due to pickup of communication signals. (See "Smart Houses -- Will They Be RFI Dumb?" Jan. 1, 1992 W5YI Report.) ARRL pointed out that no attention appeared to have been paid to requiring these devices to be immune to external RF - and amateurs may be unfairly blamed for interfering with Smart Houses.

But FCC Technical Standards engineer David Wilson said that RF immunity was beyond the scope of



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the Smart House proceeding. "Of course, the Part 15 rules restrict the interference potential of the devices," he added. "They do not specify any immunity standards. We have to regulate, we have to limit, the amount of emissions that come from Part 15 devices for obvious reasons; you can't just let people radiate whatever they want.

"Adding immunity standards would in effect increase production cost and the cost to the consumer dramatically, probably, for a lot of electronic devices if they were required to have immunity standards as well," he said. "We haven't yet seen any kind of a major reason to do that. In other words, the added cost to consumers of immunity standards just doesn't seem to be warranted by the insignificant, comparatively speaking, level of problems that we've had with the complaints about interference."

This information should be contrasted with the comments of Ana Curtis, Attorney-Advisor in the Public Service Division, FCC Field Operations Bureau, in an interview published in your April 15, 1992 issue. The FCC is "...being asked more and more to solve these interference problems," Ms. Curtis said, adding that "We have to put the burden where it rightfully belongs: on the manufacturer."

## TO THE RESCUE! HAWAIIAN HAMS ACT AS RELAY Between Stranded Skipper and Coast Guard

On Sunday afternoon, June 7, 1992, *Jim Reid (KH6/W6KPI)* relaxed in the shack of his Lawailoa Bed and Breakfast Retreat for hams on the Hawaiian island of Kauai. Jim and his wife moved to Kauai from California about a year after the Santa Cruz earthquake seriously damaged their home. Also in the room were *John Hamby (WB4UZW)* and *Bill Tise (KB4UZN)*.

John was talking to friends back in North Carolina and Virginia. What followed, Jim says, "...ranks as the most thrilling, exciting, and satisfying of my 41 years as a licensed radio amateur."

At 0240 UTC, 6/8/92, the trio suddenly heard a distress call on 14245 kHz, signing "WY2 2403." The station calling declared an emergency situation on board his ship off the coast of Cuba, in the Caribbean sea.

At first, the hams thought this was a hoax. But a few minutes later the breaker identified himself as Eddie Jacobson, skipper of the commercial vessel Sea Harvest, out of Fort Meyers, Florida, and bound for the Cayman Islands. John Hamby contacted Eddie and learned that Eddie's boat had been struck by lightning a few hours before, which had knocked out his navigation system. Not knowing where he was or where he was headed, Eddie worried that he might enter hostile Cuban waters! He began making distress calls, and

finally moved into the Amateur band.

John contacted one of his North Carolina ham friends, who then called the Coast Guard in Miami. Within minutes, NMA-Miami, a Coast Guard communications station, appeared on frequency, calling for the Sea Harvest. But Eddie could not hear it.

For the next several action-packed hours, Jim Reid's station relayed information between the Sea Harvest and the Coast Guard. The three hams in Hawaii took turns at the mike. Eddie reported pitch-dark, clouded skies, with frequent squalls and lightning strikes. If that wasn't enough, he suddenly noticed an unidentified vessel approaching him. He seemed to feel threatened, according to the Jim. The Coast Guard asked Eddie to send blink-light S.O.S. signals. The unlit, unidentified vessel gave no response and began to slowly circle the Sea Harvest, closing in on him!

Still speaking through Hawaii, the Coast Guard was informed that the other vessel appeared to have about 50 men on deck, none of whom spoke English. The Coast Guard offered several Spanish phrases for Eddie to shout, such as "Which way is Cayman Island?" and "Which direction is south?" A ham in Mexico suggested he shout "ayuda," the Spanish word for help. Eventually the Spanish-speaking sailors understood and pointed to the south; Eddie took this to mean that this would keep him out of Cuban waters. The other boat then sailed off to the east.

By this time the Sea Harvest and the Coast Guard had solid radio contact. Eddie was directed to fire up his engine and head to the south at eight knots. He was now out of harm's way. At 0635 UTC, Jim Reid, John Hamby and Bill Tise signed off. Eddie expressed his deep thanks to them and all the other hams who had helped with the relay link, marveling about the fact that he could reach help literally from the other side of the planet. He and the Coast Guard then switched to a maritime frequency.

For the record, Jim's station includes a Kenwood TS-950SD, driving an Alpha 87A amplifier, followed by an MFJ Versa Tuner V and a Cubex 4-element, 5-band cubical quad antenna. He is a member of the Kauai ARC and Kauai County RACES.

Interestingly, Jim Reid is currently involved with a local restriction that could force him to lower his 45-foot antenna to 30 feet. He will appear before a hearing to prove why the extra height is necessary. What better ammunition with which to fight such a battle than the legitimate claim to have saved lives with a 45-foot antenna? The story made the front page of the June 14th "Golden Island" (Hawaii) newspaper - complete with a photograph of Jim Reid and John Hamby at the controls of their ham station.

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● **James Winstead, Jr., 36 of Redwood City, CA has been fined \$15,000** for "malicious interference using an unlicensed station." Winstead, an Advanced Class amateur, holds station license KK6SM. Winstead is charged with intentionally interfering with many stations in various radio services out of spite for the police.

From October 1990 through July 1991, the FCC's San Francisco Office was notified of communications interference by at least fifteen public safety agencies ...as well as taxicab companies, automobile emergency organizations, broadcast auxiliary stations, general mobile and amateur radio licensees in the San Francisco Bay area.

On July 12, 1991, Winstead allegedly operated a mobile dual-tone amateur transceiver to interfere with taxicab communications on 457.45 MHz and amateur communications on 147.81 MHz. He is charged with retransmitting the amateur radio signals on the input frequency of the taxicab company repeater and the taxicab's communications in the amateur two meter band.

His equipment had been modified to operate as a crossband repeater, enabling Winstead to receive and retransmit signals simultaneously on both UHF and VHF frequencies. The equipment was surrendered to FCC agents.

● Los Angeles amateur, **James L. Brantley, K6KPS was issued an \$8,000 FCC administrative fine** on June 3rd: \$7,000 was for malicious interference and \$1,000 for one-way broadcasting.

The FCC said K6KPS transmitted repetitive one-way transmissions consisting of "CQ" calls and other calls that were not actually intended to establish communications. The evidence was obtained by FCC mobile unit and field office monitoring - and from the complaints of other amateur operators. The FCC increased the amount of K6KPS' broadcasting misconduct fine due a similar Oct. 1985 violation.

● **Smoothline, Ltd, a Hong Kong supplier has been fined \$10,000** for marketing cordless telephones which radiated a field strength five times that authorized by their FCC equipment authorization. They paid a \$2,000 fine for the same violation four years ago.

● Word to the wise department! **Is your amateur repeater on a commercial tower?** Higher may be better, but it also might be very expensive! Radio stations are being socked with stiff FCC fines if the tower does not comply with lighting, painting and FAA tower light malfunction notification rules.

"It is the Commission's policy to hold each Commission licensee on a tower individually responsible for complying with the rules relating to radio antenna towers, and this applies even if the licensee does not own or control the tower, or has contracted with another person to maintain the tower."

Twenty-one stations leasing space on one tower in Maryland, were recently assessed a total of \$168,000 in fines when faded and peeling paint and an inoperative top beacon was discovered.

● **FCC Public Notice, released June 15, 1992.** "Effective August 1, 1992, any amateur operator license applicant seeking code credit because of a severe handicap, the duration of which will extend for more than 365 days beyond the date of the physician's certification, **must use FCC Form 610 dated March 1992.** The applicant must complete the patient's release on the 610.

"The Commission adopted a *Report and Order* on December 13, 1990, that exempted from the 13 and 20 words-per-minute telegraphy examinations - amateur operator licensees who are incapable of passing those examinations due to severe handicaps. Because of international requirements, however, no exemptions will be granted from the 5 wpm telegraphy examination.

"Section 97.505(a)(5) of the Commission's Rules requires that a physician's certification and a patient's release permitting disclosure to the FCC of medical information pertaining to the handicap be completed. The term "physician" is limited to practitioners with full medical privileges, that is, doctors of osteopathy or medicine."

The March 1992 Form 610 *Amateur Radio Operator/Station Application* is available from the W5YI-VEC Office (P.O. Box 565101, Dallas, TX 75356. SASE appreciated.) Amateurs may continue to use all previous Form 610 versions for purposes other than handicap telegraphy certification.

● The new **General Chairman of the 1993 Dayton HamVention is Dave Grubb, KC8CF.** Dave moves up from Assistant General Chairman. The 42nd annual HamVention, the nation's largest gathering of ham operators, is scheduled for April 23-25, 1993. (Trx: N8ADA)

● A Oklahoma District Court has sentenced **Michael, McClanahan, KA5TDA** (General Class) of Moore, OK, to **22 years in prison and fined him \$8,400** after determining he embezzled state funds between 1987 and 1990 to buy parts for his ham radio operation.

Investigators stumbled onto equipment stored at the state operated Oklahoma Medical Center where he worked as a computer supervisor. Purchase orders totalling \$22,000 had been falsely processed to buy the gear.

● Blind amateur **Hap Holly, KC9RP** is publishing a new bi-monthly **90-minute audio cassette publication known as the RAIN JOURNAL.** (RAIN is an acronym for the *Radio Amateur Information Network.*)

Most of the commentaries are selected from packet radio and are read by various Chicago area amateurs. Hap's packet address is KC9RP @ WB9YAE.IL. He may also be reached at 708/518-6551. To hear an example of RAIN programming, call the RAIN Dialup Service at 708/299-INFO.

Submission of ham radio oriented editorials and interviews for the *RAIN JOURNAL* are encouraged. To receive a demonstration cassette of this audio magazine, send an SASE with 52¢ postage (or a free matter for the blind mailer) along with \$2.00 to: **RAIN, P.O. Box 2565, Des Plaines, IL 60017-2565.** Subscriptions cost \$12.00 - include a good quality C-90 cassette.

● A Dallas County Court has ordered **Garland Moser, N5EWD** of Irving, TX to pay a \$10,000 damage judgement to **David Pease, N5DA** of Sunnyvale, TX. Presiding Judge David Brooks also issued a permanent injunction against Moser as sought by N5DA.

Pease owns the *North Texas Repeater Network* - a group of linked repeaters on the 2 meter and 440 MHz ham bands. The case goes back to July 1987 when Pease filed a lawsuit

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against nine amateurs and the Texas VHF-FM Society. He charged the defendants with libel, slander, harassment and conspiracy. The court dismissed the lawsuit against the VHF-FM Society and **Joe Jarrett, K5FOG** of Austin.

All of the remaining defendants eventually settled out of court but Garland Moser filed and pressed forward with a countersuit. The court found for the plaintiff.

- The **Western States VHF/Microwave Society** has been formed to represent weak signal interests in national and local band planning matters. The membership of the newly formed group has voted overwhelmingly to adopt the ARRL national 222 MHz band plan, which sets aside 222-222.150 MHz for weak signal activities.

- STS-50 aboard the Shuttle Columbia blasted off from Cape Canaveral on Thursday, June 25th carrying a 13-day space laboratory mission and the Shuttle Amateur Radio Experiment. **SAREX is being operated by spacecraft commander Dick Richards, KB5SIW, and mission specialist Ellen Baker, KB5SIX** using the callsign KB5SIW on voice. They also plan to use W5RRR-1 on packet and W5RRR/S on slow-scan TV.

As in previous SAREX flights, the astronauts wanted to talk with school children. Although most schools will be out on summer vacation during the flight, there are a number of school groups who will reconvene for the opportunity to communicate with the crew.

A test QSO from Columbia to W5RRR on Friday during a six minute pass worked fine but a planned Boy Scout contact in Galina, Ohio, failed the following day. The ARRL told the crew that they can operate Field Day as 2C SPACE.

On Sunday morning at 9:58 a.m., June 28th, eleven year old Jennifer Shane, N5WFP called the shuttle on schedule and astronaut Dick Richards answered right back on the first call. Jennifer told Richards that they had students at College Park Elementary in LaPorte, Texas. The microphone was then passed around among kindergarten and first grade children.

Although a four minute pass was anticipated, the crystal clear audio

actually lasted more than five and one half minutes. Every student got to ask their question ...including one not rehearsed! "Does being weightless make you want to go to the bathroom more or less than normal?" Richards answered back, "Funny you should ask, but yes it has the effect of making us have to go to the bathroom more often."

When the crew is not on the air talking with school groups, the crew plans free form QSO's and unattended robot and attended SSTV and packet operations to maximize the opportunities for we earthbound hams to communicate with the Space Shuttle Columbia.

There will also be periodic Amateur Television (ATV) uplinks from selected ground stations to Columbia during the flight. At press time, the packet and television had yet to be activated - and we heard a report that it may not be operational.

SAREX operations will take place on 2-meter FM Voice, SSTV, or Packet. The downlink and primary uplink frequencies are the normal 600-kHz split. The downlink (from Columbia) frequency is 145.55 MHz. The primary uplink frequency is 144.95 MHz, with secondary uplink frequencies of 144.91 and 144.97 MHz. In the Voice, SSTV and packet modes, the transceiver has the capability of transmitting of 145.55 and receiving on any of the three uplink frequencies.

The 2-meter VHF packet mode operates at 1200 baud, AX-25. Where MIR operates simplex (everyone transmits and receives on the same frequency), SAREX will use split half-duplex operation. The normal downlink and uplink frequencies for SAREX apply: 145.55 downlink; 145.95, .91, and .97 uplink. The system can be manually operated by the astronauts or it can be placed in a robot mode for unattended operation.

There are three sets of beacon messages transmitted every two minutes on packet in the robot mode: a QRZ, QSL, and SAREX beacon. The QRZ beacon will send a listing of the most recent callsigns heard by the packet station on Columbia.

The QSL beacon follows the QRZ beacon with a listing of the most recent calls worked and logged. The SAREX beacon is a b-text beacon with the

following statement: "This is STS-50 SAREX Robot station W5RRR-1 on-board the Space Shuttle Columbia." When you connect to the packet station in the robot mode, you will get: "#n is your STS-50 SAREX QSO number." ("n" is a 1 to 4 digit QSO number.)

Do not disconnect after you have received the message. Let SAREX disconnect you. It must receive the ACK from you to be logged as a valid QSO. If you get a connect and no message or you get a connect and a message but no disconnect, be patient. Wait a minute or two, and if you still have not received a message or a disconnect, do a forced disconnect and try another connect. The congestion will be very great and ACKs will be slow. It is pointless to repeatedly connect to the SAREX after receiving your number and getting the disconnect. Only your first QSO number and call is logged. Your subsequent QSO numbers will be ignored by the log program.

Be sure to write down your QSO number. When you send off for a QSL card for a packet QSO with Columbia, you must indicate your QSO number on your QSL card to be eligible for a SAREX QSL card. No number will be given out for voice contacts.

Despite the mode, your QSL card should indicate the date, time (UTC, please), mode, and frequency of the contact. There will be a separate QSL card for those stations whose callsigns were heard onboard Columbia, and an SWL card for those who copied the beacons, heard KB5SIW on voice, or heard or copied the SSTV.

The Goddard Space Flight Center ARC, WA3NAN, is very active during Space Shuttle flights. WA3NAN re-broadcasts the air-to-ground communications between the astronauts and Mission Control Center in Houston. WA3NAN can be found on 3.860, 7.185, 14.295, 21.395, 28.650, and 147.450 MHz. 14.295 MHz is their primary frequency, with the others identified as secondary and active as operator availability and band conditions warrant.

Space Shuttle Columbia is due to return on Wednesday, July 8th. Three more astronauts have also passed their Technician ham exams. They are: Ellen Ochoa, Mike Foale and Ken Cockrell.



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## HAM OPERATOR, K2LZ, SUBMITS HDTV PROPOSAL FCC Calls Suggestion "...a New Development in HDTV"

In the June 1, 1992, W5YI Report, we devoted a page to the subject of High Definition Television (HDTV), and alerted you that the FCC intends to start changing over from the current NTSC standard to a more advanced signal format by the end of 1993.

The new format is expected to provide viewers of the next generation of TV sets with at least the line resolution, that is, more than 1050 horizontal scan lines per frame in contrast to NTSC's 525-line images. Four digital systems and one analog, all of which are not compatible with existing NTSC TV sets, are competing for adoption as a new U.S. standard.

If a 6 MHz wide channel is required to send a 525 line image frame in 1/30th of a second per the current NTSC standard, then information transmission system logic tells us that a 12 MHz wide channel would be needed to transmit successive 1050 line image frames in the same 1/30th second time intervals.

Because the FCC wants to keep the current commercial TV channel allocation plan with its 6 MHz wide channel allotments, HDTV proponents believed the only way to cram more than twice the detail of NTSC video into 6 MHz of spectrum was to "compress" their signal formats at certain times such as during image movement or scene changes. By compressing the baseband video images using certain digital or analog algorithms, the proposed HDTV systems attempt to shoehorn 1050 or more scan lines into a 6 MHz channel. But viewers will notice a loss of picture quality (1) whenever images move across the screen (as TV images normally tend to do), and (2) at the time of any scene change.

Ham operator and ATV experimenter **Leo Zucker, K2LZ** of White Plains, New York, has developed a HDTV broadcasting system that overcomes this problem and his invention was awarded U.S. Patent 5,067,017 last November. We recently found out about this development when our Washington attorney - who also represents Zucker - asked if we had heard about the HDTV breakthrough developed by a ham operator using amateur spectrum. We decided to investigate.

K2LZ's approach does not require compression of the video image being transmitted in order to remain within a 6 MHz channel bandwidth and, furthermore, offers compatibility with existing NTSC receivers. A very big advantage, indeed! Basically, he simply weaves two 525 line transmitted NTSC signals *transmitted on the same frequency* into one and ends up with 1050 line HDTV resolution! The TV set actually receives two signals - the second overlapping the first! He proved it worked on the 70 cm ham band!

During initial tests of the system, two ATV (amateur television) transmitters were operated at the same time on a common carrier frequency of 434.0 MHz. The secret to the system is simultaneous transmission and receipt of horizontal and vertical polarized signals.

The two transmitters were connected to separate horizontal and vertical yagis - each modulated with an NTSC video signal. Depending on the polarization of the receiver/monitor antenna, it was possible to detect and view the two simultaneously radiated video signals on the same screen without noticeable crosstalk. The approach thus allows effectively up to 12 MHz of un-compressed video detail to be radiated within a 6 MHz RF spectrum channel. Instead of using twice the bandwidth, you simply use twice the transmitters!

K2LZ's system uses "orthogonal coherent radiation" to provide an NTSC-compatible HDTV signal format, as follows: A 1050 line high definition image produced by a studio camera or other source, is separated into two 525 line images. One frame is composed of all the odd lines of the original image and the other frame is composed of all the even image lines. The two frames are transmitted simultaneously in the conventional NTSC 2-field interlaced format, using separate transmitters operating on the same TV channel.

One transmitter is connected to a horizontally polarized antenna and the other to a vertically polarized antenna. Conventional TV receivers will therefore reproduce standard 525 line images using their existing horizontal antennas. New HDTV receivers will use a vertically polarized antenna in addition to a horizontal one (probably on the same boom), and have appropriate circuitry to interleave all the separately detected 1050 image lines in the proper sequence and timing for a high resolution display screen. The original HDTV image can then be viewed without distortion or other artifacts due to compression.

Most of the broadcasting equipment needed to implement K2LZ's proposed system (transmitters and antennas) are already in existence and would not become a financial burden to TV broadcasters who will otherwise be forced to purchase complex and expensive studio equipment necessitated by the other systems now under consideration. Nonetheless, a non-NTSC compatible version of K2LZ's system can be implemented to allow high definition images to be transmitted in digital or even frequency modulated (FMTV) form with little or no baseband compression.

In a *Second Report and Notice of Proposed Rule Making* released May 8, 1992, the FCC referred to K2LZ's system as a new development in the HDTV standards setting program. Additional performance data for the system is now being gathered for submission to the FCC.